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OCTOBER, 1935

PUBLISHED BY
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THE AMERICAN ENGINEER

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WORK RELIEF PROGRAMS

ENGINEERS MUST DISCLAIM RESPONSIBILITY

ATTEMPTS TO DISCREDIT PROFESSION LIKELY TO FOLLOW ATTEMPTS OF SOCIAL LEADERS

NATIONAL SOCIETY SHOULD ACT

AS the present Federal Administration approaches the time wherein both adherents and critics will exhaust the supply of superlatives in praising or condemning its methods and its accomplishments, or lack thereof, one can envision the engineer as an element about whose head a storm of criticism and scorn is likely to break.

Already there are being expressed conclusions, emanating from high places, to the effect that public works have been tried and found wanting as a remedy for unemployment. General Hugh Johnson, in a recent statement, issued in his ipse dixit manner, criticizes public works and again espouses his old love of industry coding as the road to recovery. Subsequently, he toned down his remarks by approving certain public works as a tail to the coding kite. However, the belief persists that this is but an intimation of an impending struggle, between the old financial order and the new social regime for ascendency in directing whatever form of society may prevail. The engineer is likely to be a discredited onlooker until the futility of control by each of the contestants has been established through bitter experience.

The prospect is not pleasant to contemplate. The majority of citizens of a great nation may find themselves subjects of an impossible outmoded order or of a new society which, however, ideal, must be regarded as experimental so long as self-styled social experts remain in control.

The conduct of urban civilization is inseparable from a knowledge of its causes and the elimination of the engineer in the matter of administration invites confusion and disaster. The time is now at hand when the engineering profession should undertake a militant and purposeful campaign in behalf of the American people. As a preliminary step the National Society might well consider a proclamation to the effect, —that the works programs of the past few years have not been planned, projected, or executed under the direction of engineers,—that they have been conducted in violation of all sound engineering reason, practice or experience, and,—that the engineering profession of the United States condemns any attempt to attribute C.W.A., P.W.A., F.E.R.A., T.E.R.A., W.P.A., and all other so-called work programs to engineers.

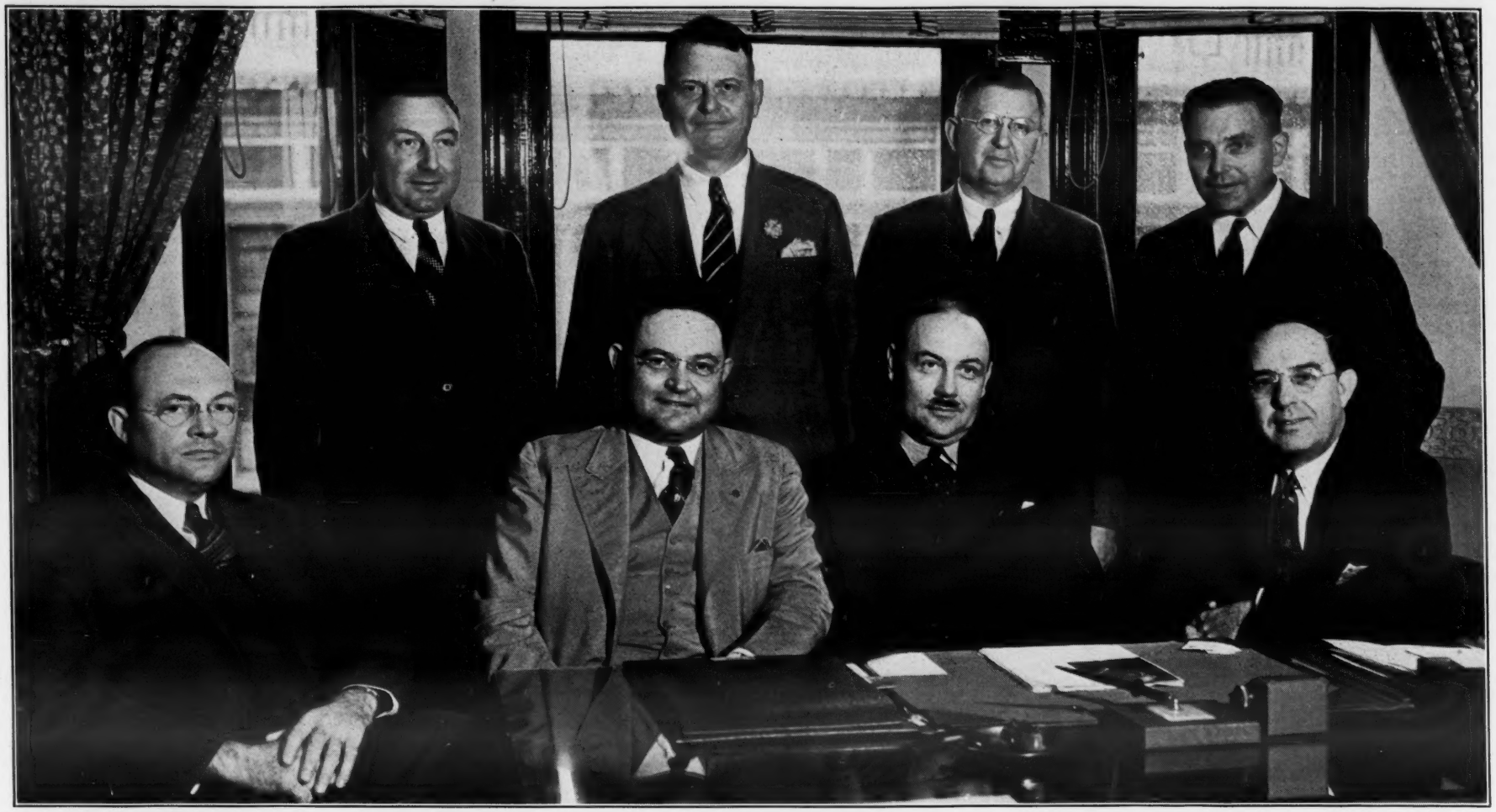
Few question the objectives of the New Deal philosophy, nor will most people contend that its administrators do not have ability. The present writer is an adherent. However, the consummation of a program requires organization experience for its execution. Here, it seems to many people, especially engineers, is the weak link in the chain conceived for a more abundant national life. With engineers, architects and contractors,—without whose advice, talents and experience no works program should be considered,—begging for an opportunity to be heard, the administration, Federal, State and Municipal, continues to blunder along with social satelites attempting roles for which they are no more fitted than they are to direct an army engaged in repelling a foreign invader.

Engineers are not responsible for the results of W.P.A. or P.W.A. They did not develop them, they have not directed them, nor did they have a determining voice in planning or framing them. Dividing a sum of money by a number of people may be a social approach to the execution of public works, but it is not an engineering one. To plan and execute a public works campaign with such reasoning is about as sensible as planning a military campaign by dividing a certain quantity of ammunition amongst a given number of men and thus determining in advance the casualties and results.

The engineer cannot sit idly by and be made the scapegoat of politicians and social workers. He is a soldier in his sense of duty, he is a patient creature and, although an inactive one, a well-meaning citizen. He must declare himself before society loses faith in his capacity to serve it. Innuendo and insinuation must be forestalled by a proclamation. National Society, will you prove your right to leadership by issuing a proclamation at Columbus? The profession awaits and the public will commend a courageous attitude.

OHIO ENGINEERING OFFICIALS

OFFICERS OF THE OHIO SOCIETY OF PROFESSIONAL ENGINEERS AND THE OHIO STATE BOARD OF REGISTRATION



Standing (Left to Right)—Wade W. Shidler, Canton, O., Pres. O.S.P.E.; Paul W. Maetzel, Columbus, O., 2nd Vice-Pres., O.S.P.E.; John Laylin, Secy., O.S.P.E.; Perry T. Ford, Secy., State Board, 1st Vice-Pres., O.S.P.E. *Seated (Left to Right)*—Hal G. Sours, Akron, O., Member State Board; Walter W. Graf, Lancaster, O., Member State Board; John O. McWilliams, Cleveland, Pres. State Board; Curtis C. Lattimer, Columbus, Member State Board.

PROGRESS IN OHIO

The Engineers' Rapidly Growing Recognition

A Result of Professional Awakening

Report of Registration Board a Noteworthy Document

ONE of the most complete and instructive engineering publications that has appeared in recent years is the "First Annual Report of the Ohio State Board of Registration for Professional Engineers and Surveyors." It is recommended for perusal by every engineer in the State of Ohio.

The Board is composed of five members:

John O. McWilliams, Chairman, Cleveland; Hal G. Sours, Vice-Chairman, Akron; Walter W. Graf, Lancaster; Curtis C. Lattimer, Columbus; Perry T. Ford, Secretary, Columbus.

Following are excerpts from the report:

REGISTRATION IN OHIO

History

The Professional Engineers and Surveyors of Ohio, for over a half century have struggled in an effort to pass a State Engineers Registration Act in order that a professional designation might be established, recognized under the law, for the purpose of safeguarding life, health, and property and to distinguish the quack and the interloper from the man who, by reason of his technical training and experience, is qualified to be called an engineer or surveyor.

The first effort on the part of the engineers was instituted in 1880 at which time a bill was presented to the Legislature providing for surveyors to be registered. Then, intermittently, in the following years 1881, 1882, 1884, 1885, 1887, 1892, 1896, 1905, 1906, 1907, 1911, 1913, 1919, 1920 and then again 1930 the Eighty-ninth General Assembly in regular session passed a Registration Act but was vetoed by the Governor.

The Ninetieth General Assembly at its regular session passes an engineers and surveyors registration act; the same was signed by Governor George White and became effective September 26, 1933. The Ninety-first General Assembly modified this act in conformity to the law as contained in this report and includes Sections 1083-1 and 1083-26, inclusive, of the General Code of Ohio.

This amended law was signed by Governor Martin L. Davey and became effective August 14, 1935.

This entire expense of the board and the administration of its affairs is provided for by the engineering profession in the form of application and final fees, and an annual renewal fee as provided for in Section 1083-12, Section 1083-14, Section 1083-17, Section 1083-21, and no part of the maintenance of this board is borne by the state.

Purposes

The purpose of registration is to regulate the practice of engineering and surveying; to elevate the standards of engineering service and to protect the public against incompetency in the designing of public works of all kinds, including buildings, structures, machines, equipment, processes, works or projects, wherein the safeguarding of life, health or property is concerned or involved.

The whole purpose of registration, now in force in thirty-four states of the Union and embracing approximately ninety-three per cent of the total population of the United States, is to provide a professional designation in order that the public might know who are entitled to the professional designation and impose the same principles that have long been in force in the professions of law, medicine, and other professions.

PROFESSIONAL ACTIVITIES OF OHIO ENGINEERS

"I hold every man a debtor to his profession; from the which as men of courage do seek to receive countenance and profit, so ought they of duty to endeavor themselves by way of amends to be a help and ornament thereunto." —*Frances Bacon.*

Since registration has become effective the professional consciousness of the Engineer in all of the branches of engineering has become aroused to the necessity for the establishment of professional practice and the safeguarding of the public welfare that twenty-eight local Societies, confined strictly to registered Engineers and Surveyors, have been formed in the State of Ohio as follows:

Devoted to Professional, Social, and Economic Welfare Of All Ohio Engineers

1. Maumee Valley Society of Professional Engineers.
2. Toledo Society of Professional Engineers.
3. S. O. S. Society of Professional Engineers.
4. Elyria-Lorain-Sandusky-Norwalk Society of Professional Engineers.
5. Cuyahoga County Society of Professional Engineers.
6. North East Ohio Society of Professional Engineers.
7. Mahoning Valley Society of Professional Engineers and Surveyors.
8. Akron Society of Professional Engineers.
9. North Central Ohio Society of Professional Engineers.
10. Ohio Northern University District of Professional Engineers.
11. Midwestern Ohio Professional Engineers' and Surveyors' Association.
12. Marion Society of Professional Engineers.
13. Central Ohio Society of Professional Engineers.
14. Zanesville-Regional Society of Professional Engineers.
15. Canton Regional Society of Professional Engineers.
16. Steubenville Society of Professional Engineers.
17. Belmont Regional Society of Professional Engineers.

(*Continued on page* 25)

CONVENTION FORECAST

Arrangements Have Been Completed for What Promises to be Greatest Engineers' Meeting in History of Profession

PRESS, radio, industry, educational institutions and professional societies throughout the state are collaborating with the Ohio Society in preparing for the Annual Conventions of the National Society of Professional Engineers and the National Council of State Boards of Engineering Examiners.

Wade W. Shidler, President of the Ohio Society, has appointed the following Committees:

Entertainment:

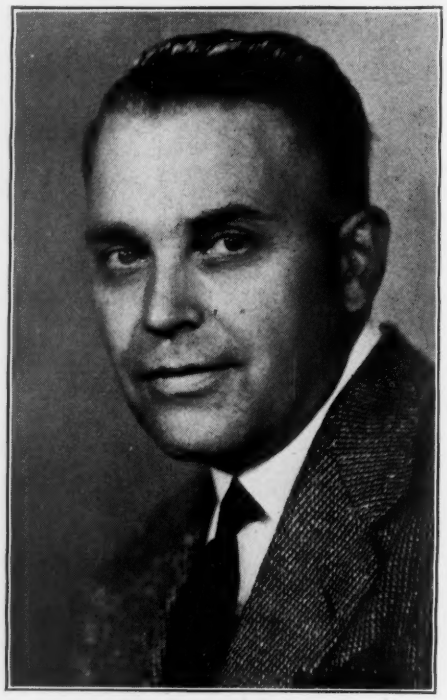
A. F. Unckrich, Chairman; F. A. Kelly, Ralph Williams, Walter W. Graf.

Reception:

Ed. G. Cantwell, John Jaster, Jr., C. C. Lattimer, T. S. Brindle, B. H. Frasch, R. R. Litehiser, C. S. Finkbeiner, H. G. Sours, H. L. Hubbell, Guy F. Atkins, Paul W. Maetzel, F. L. Raschig, Ed. R. Burke.

Transportation:

T. H. Brannan, R. C. Watts, T. E. Morgan, J. Cameron, Robert N. Waid, Fred Swineford.



PERRY T. FORD
National Society Convention Chairman

Speakers, whose names are advisedly withheld, prominent in many walks of life, will be heard on social, economic and professional topics. At least six addresses will be broadcast over large networks. High officials, federal, state and local, will appear before the Convention sessions to discuss the problems and policies of the nation. Ex-president Herbert Hoover and Newton D. Baker are amongst those invited to participate in this program.

The banquet is expected to attract between one and two thousand persons. Special committees appointed by the Columbus Engineers Club and the Franklin County Society of Professional Engineers are assisting the State and National Committees.

Exhibits representative of civil, mechanical, electrical, structural, mining, metallurgical, industrial, ceramic and chemical engineering have been planned. The Society is being assisted by industries and by Ohio State University.

Representative engineers from thirty-eight (38) states have expressed their intention of attending the Convention. Amongst those whose acceptances were at hand weeks in advance are the following: David B. Steinman, New York, President of the National Society of Professional Engineers; Ralph J. Reed, Los Angeles, President of the National Council of State Boards of Engineers; Willard S. Conlon, Washington, D. C., Secretary of the National Society of Professional Engineers; F. Keith Legare, Columbia, South Carolina, Secretary of the National Council of State Boards of Engineering Examiners; H. E. Babbitt, Urbana, Illinois, Secretary of the Illinois Society of Engineers; C. S. Crouse, University of Kentucky, Lexington; G. S. Pickels, University of Illinois, Urbana; J. Stephen Watkins, Lexington, Kentucky; W. A. Stubbs, New York; Arthur V. Sheridan, New York; O. Lauregaard, Denver, Colorado; U. W. Dougherty, Knoxville, Tennessee; S. H. Graf, Corvalis, Oregon; James L. Ferbee, Milwaukee; Herbert E. Mendenhall, Tallahassee, Florida; Marcel Garsaud, New Orleans; C. S. Hammatt, Jacksonville, Florida; John J. Cox, Ann Arbor, Michigan; G. M. Butler, Tuscon, Arizona; L. M. Martin, Council Bluffs, Iowa; P. H. Daggett, Chapel Hill, North Carolina; Paul Doty, St. Paul; George E. Taylor, Charleston, West Virginia; James R. Rhyne, Little Rock, Arkansas; C. G. Massie, Lynchburg, Virginia; Hugh A. Kelly, Jersey City, New Jersey; Thos. V. Battin, Philadelphia; J. S. Dodge, Ames, Iowa; R. V. Achatz, Aurora, Indiana; and Ed. F. Smith, Indianapolis.

MACHINES AND SOCIETY

Blessings and Not Blights Will Accrue to Civilization

When Man Restrains Unbridled Use For Personal Gain

By
RUDOLPH C. LANG

"A tool is but the extension of a man's hand, and a machine is but a complex tool. And he that invents a machine augments the power of a man and the well-being of mankind."

—Henry Ward Beecher.

ON the street corner, at home, in societies, from the pulpit or wherever there is sufficient intelligence to utter words, will be heard discussions relating to our present economic dilemma. Capital blames labor, labor blames capital; politicians blame bankers, and bankers, politicians; Democrats say its the aftermath of Republicanism and Republicans vice-versa; while countries point with indicting fingers at each other. Undercurrent in most all of these discussions is the condemnation of the machine and yet there is no statement further from the truth.

Will Durant, our present-day philosopher, tells how he was employed in a celluloid factory, making combs and that one day an engineer came through the plant with its owner and said, after watching a while, that a machine could be built that would turn out twenty combs in the same time that one was now being produced. Whereupon, the owner commissioned the engineer to proceed. In about six months time a machine was delivered and Will Durant became the proud operator of it, turning out twenty combs in the same time that he formerly turned out one. Now Will Durant did admit that he was taxed less physically than before, also that he did not feel entitled to any additional remuneration since he had in no way contributed to the invention of the new device.

Up to this point, no one was injured by the machine, but let us set up the rest of the picture. Did the manufacturer reduce the price of combs to correspond with the reduced labor costs? Did he say that the machine had cost him so many dollars and that as soon as he had this amount returned to him with a fair interest on his investment, he would bring down the price of combs? Of course not. He set up a price just slightly lower than that of his competitors who were still using the old-fashioned methods and proceeded to pocket the difference. Competitors had to follow suit or go out of business, and follow they did. The consuming public were now paying many times the actual cost and normal profit for this article and eventually when their finances were exhausted, could not buy combs at any price. Combs in this case is just an illustration of practically every commodity or service used by the public.

We all know that perpetual motion is a myth and therefor if our social system is to go on, also know that it must be replenished from time to time from some outside source. This source is really what we call natural resources, such as mining, agriculture and natural power like that of the sun or water. These in themselves provide no comfort unless utilized through the medium of manufacture and it makes no difference whether such manufacturing goes on in our own bodies or in some large edifice with belching smoke stacks. In our own body, however, the manufacture is controlled to keep step with the demand. We breathe more air when we run, we require less food when we rest and so on. In the case of the smoke-stacked edifice, something else goes on.

Here are people who practically breathe for us or supply our demands so that we need not exert ourselves. We no longer need to run when we are in a hurry for we now have trains, trollies, automobiles and aeroplanes, and say the manufacturers, "You may have all these things but you must pay for them." This is a logical conclusion since these things represent labor and capital expended on their part, but the question remains, how much?

Should the price be based on cost plus reasonable profit or as in the case of combs, should it be just slightly lower than the competitive price. Reasonable profit could be exacted by all, along the line, and the deficit made up by the natural resources, while unreasonable profits accumulate wealth in excess to individual demand and causes the entire system to fall down. It is true that the machine helps to make such accumulation possible, but do we try to eliminate fire from the earth because of its destructiveness or do we outlaw automobiles because they may run over some of us? Of course not, we try to control them by rules and regulations, some of which are at least flavored with intelligence.

Food is perhaps the only commodity that has a somewhat limited consumption. We can only eat so much; regardless of how voracious we may be. True, we are more lavish with food in good times and certainly more wasteful but even so, it is hardly probable that we waste even in good times, more than two or three times what we consume. However with millions going hungry and millions on the verge of it; it does not seem likely that we have supplied the ultimate demand or reached what statisticians so fondly refer to as the saturation point. Excluding food for the moment, who could not use another suit if they are fortunate enough to have at least one already? Who would not travel more if funds were available? How many would like a boat or a house or an automobile or if they possess any one of them, might like all three? How many could use an extra automobile so one might be available for the old folks while Brother or Sister are entertaining at the country club and naturally must have the car?

We had better stop here or be rightfully criticized for being facetious. There are many among us who

cannot provide proper medical attention for our loved ones, who do not know where our next meals are coming from or where we might find shelter, not in indirect-lighted, air-conditioned apartments with liveried attendants at the door but substantial enough to protect life, health and meager property.

The sun is a machine and beneficial as it is, it burns our bodies to a crisp if not enjoyed with due caution and just so the machine can sear our very life. The sun is a machine, yet no one wants its rays curtailed, the tides are prime movers yet cause no political strifes. Gravity, probably one of the greatest power units known is a form of a machine, without which our civilization could not have been founded, let alone developed. Why are not these machines included in the long list of culprits who brought about our depression. The answer is simple. These machines are governed by some ulterior force outside of the scope of man. Why then, point with such disdain at the innocent machine which after all has done much to make our life more full and has employed millions who might otherwise be still searching for a niche. Should we destroy the machine and revert to the back-breaking toil of former years with its associated long hours, because some people have hoarded the surplus which the machine created? Surplus, did we say? Yes, but erroneously so unless we have feast and famine at one time, which in other words only mean that some feast while others famish. Why should the machine be blackmailed because a few humans through circumstance and greed have declined to share at least some of the advantages derived therefrom and what is still worse to pyramid such advantages from generation to generation. The increased levies on inheritances and the higher sur-taxes are all designed to discourage such procedure but unfortunately are circumvented by methods devised before such legislation can be put into effect.

Another angle is the lack of tariff control. Here the machine is set up in some foreign land where cheap labor augments the manufacturing savings made by the machine and the output shipped and sold in the higher labor markets, where a little residue of purchasing power still remains. Is that the fault of the machine or could it be possible that our administrators have overlooked something. We have only to examine the bulk of inexpensive machine-made merchandise from both the east and the west to see where the cheap labor markets and low living standard areas are. In such cases some manufacturers have not been content to reap the harvest brought to them by the spread between the cost of hand labor and machine production but have also taken advantage of the labor situation as well.

We hear much talk from time to time about patriotism and love of Country, yet only a month ago, a large concern in the United States with interests in South America, was looking for additional mechanized industries to send to that continent, industries that were now operating in this country and shipping merchandise to Southern Countries. Will the loss of such trade be blamed on the machine or on the selfish exploitation of it. Another case is that of a large optical company who are now planning to operate a plant in Europe. These are not isolated cases for less than three weeks ago a large company in this country with factories already in four foreign countries started negotiations for a fifth, also to be erected on foreign soil. To get the full significance of this case, one must know that formerly United States produced ninety per cent of the worlds requirements of this product in American plants with American help who though reluctantly, gladly paid American taxes because they had something to pay them with.

Now there are doubtless many who actually believe in their heart and soul that the machine is the basis of most of our present evils and particularly those who have lost employment following the adoption of some machine. However, cause and effect are not always readily associated, nor does it always follow in orderly sequence. These people will say "Yes" but how about the nineteen men who lost their jobs when the comb machine was built and produced twenty times the output of one man. To begin, we must face the fact that the nineteen men are already out and must be supported in one way or another. They must, either find employment elsewhere or become a burden on those more fortunate ones who have still retained their employment. Relief rolls like most charitable devices rarely pay the ultimate needy more than twenty-five cents out of every dollar obtained, the difference being used in carrying out administration and distribution. And don't forget that every time that somebody gets something for nothing that some one else gets nothing for something.

Let's go back a number of years, when we were just outgrowing the age of cottage manufacturing. That was, when people found it advantageous to specialize a bit, instead of making all of their own wares. In those days our grandfathers toiled twelve hours per day, six days a week or a total of seventy-two hours. Then came our fathers generation and we find that the hours were more generally ten hours per day or sixty hours per week and finally at the beginning of our own generation that the working period became eight hours per day for five and one half days a week or a total of forty-four hours. As far back as 1908 when the great eight-hour strike took place in the printing industries, it was felt that shorter hours were necessary.

It might be permissible to digress a bit at this point, to say that when this strike was won, a general cut from nine to eight hours was not made immediately. Instead, the industry worked six months more at nine hours and then reduced the time fifteen minutes a day, each six-months period thereafter. In this way it took two years to accomplish the results sought for, but did it in such a way as to cause no upset to either capital or labor. The N.R.A. was a step in the right direction but failed because it was handled so poorly. Had those in charge given more recognition to the industry in general and less to the lobbyists of big interests only, they would have known that such changes could not be made over night.

If the reduction in hours of labor could have been continued in the same safe and sane way adopted by our fathers much anguish could have been avoided and the machine would have been regarded as a blessing. Here we have the answer to the whole machine problem. Most of the nineteen men could still be em-

(*Continued on page* 24)

ECONOMICS IN THE MAKING

A New Gold Standard Is Coming

Professional Engineers and Their Opportunities

By
WILLIAM E. BULLOCK

ALL indications suggest that before very long Congress will replace the Gold Standard Act of 1900, which set the price of gold at $20.67 an ounce, with exactly the same kind of an Act fixing the price at something like $35 an ounce. Of course, no one knows what the new figure will be; it depends on so many things both in this country and other parts of the world. The thing that should attract the attention of professional engineers is the realization that a new legal price of gold is coming accompanied by a new legal dollar-bill value.

When it does come, the effect in the field of the dollar will be quite as revolutionary as would the effect be in the field of lumber if the length of the foot were changed to 7.08 inches or some other new figure.

A period of grace between the passage of the act and the installation of the new system would be ordinarily required. However, in the case of the dollar the period of grace is already entered upon. The Act of Congress to change the "length of the dollar" is being anticipated in important circles as may be noted from preliminaries, as the outlawing of gold suits, and the delegalizing of the old gold clause in bonds and similar indentures.

Some of the effects of these anticipations are interesting and tend to inspire confidence. A few illustrations will suffice.

In 1929 the national wealth of this country was estimated as about 475 billion dollars (1929 dollars). Suppose the dollar of that year had been "shorter," had possessed less value, had legally consisted of less grains of gold. The figure of 475 would then have been greater. Again, suppose the 1929 dollar had only "contained 59 per cent of the gold that it did contain." The 475 figure would have to be corrected to read 475 x 100/59, or 800 billion dollars.

Thus, finally, when the nation goes on the new dollar basis, other things being equal, our national wealth will jump from 475 to 800 billion dollars! So much for the national wealth. Now for national indebtedness. The present Administration has been much criticized by some for increasing the national debt from about 17 billion dollars to over 30 billion dollars. In terms of the new dollar, the old 17 figure was 17 x 100/59, or about 30 billion dollars, which is what the new national debt will be in the new dollars. The increased debt is not so bad, in fact it disappears!

How will this apparent miracle, with effects which have barely been indicated here, affect professional engineers and their work? It will not, unless they make it their concern, unless they learn to anticipate what is coming, as do presidents, premiers and international bankers such as the Morgans, Normaks, Rothschilds, Rockefellers, Thyssens, and others who generally know what is transpiring politically and in fact are often in a position to bring it about, and profit by it. The professional engineer is on a par with any of these, perhaps not in the matter of wealth or power, but in the possession of understanding.

As a corollary, all these same elements have money dimensions—we call them prices. We mean in the case of each thing, a number of times the unit of money is contained in the price of the thing. If the unit of money is to be changed, shortened, as it were, all prices will change.

Of course, the revolution in money about to come cannot be worked by just slide-ruling every existing figure on the books. It is not so simple as that. Congress cannot pass a law which would compel that. Something will have to be left to the individual, as it were, and this is where the professional engineer is concerned. The owners of figures representing property may not desire in every case to change, just because Congress marks the dollar down. In many instances, the figures were prohibitively arbitrary in the first place. In some cases they were much too high.

And, most importantly, it will be a bonzana to many to forget to make the figures up. The results will probably be toward economy of capital, towards reduction of all the figures in the balance sheet, for the purpose of re-establishing higher returns on the said capital. The obvious characteristic of the recent low ebb of capitalized enterprises has been too much capital, too little turnover of capital and too small returns. This, however, enters the field of another subject which cannot be treated in this brief treatise.

Meanwhile, the present article is offered for discussion. Perhaps the profession can be inspired to play an active role in the pending change. Let us assume we can work up for our profession a tremendous call for revaluation work. Let us assume we have an opportunity here to re-engineer the whole country. How can we influence public opinion to show we have the lead in understanding?

CHANGING CIVILIZATIONS

Must Recognize Unchanging Humans

The Problems and Opportunities of Engineers Increase with Every Change

By
WILLIAM ARNOLD

IN a recent book "The Power Age" by Walter N. Polakov, the author endeavors to establish a new proposition. He seeks to demonstrate that recent changes in the technique of production, particularly those due to the applications of a new form of energy—electric power—have produced such fundamental changes in our economic life that the relationship between economic and sociological progress is altered. He sets forth that this power age is distinct from the past machine age, not merely by a greater mass and speed of production, but by the peculiar new characteristic which make it essentially different from the preceding era.

In essence, his theory, expressed in his own words, is contained in the two following postulates:

"The scarcity of productive means in the machine age had a counterpart in the scarcity of output and in the price levels stratifying society into economic classes. A low standard of living, long work hours, low wage rates, ignorance, unsanitary conditions, and a dull and monotonous existence, were the inevitable consequences of the Machine Age limitations."

"The abundance of energy resources and hence a surplus of the means of production in the Power Age have the consequence of potential plenty without discrimination. The high pricing of scarce goods loses its point as the goods become plentiful. This, together with the change in the character of human work, leads towards the eradication of economic stratification, and permits the attainment and maintenance of an abundant standard of life in all its ramifications."

What would an engineer make out of this? Surely that our troubles are all over. Through the new Power Age, we are to have plenty. No more scarcity. No more starvation. It will be ridiculous to longer contend that there is not enough food for hungry children, that there is not a roof for everyone, and that no one need go about practically nudist or at least unkempt for lack of clothes. The $500 a year value of the primal stuff required to keep a person comfortable and respectable in this civilization is available. There should be no difficulty. Bread lines are an anachronism. Slums are passe. Vagabonding may be a hobby, but it is no longer a necessity, and begging on the streets is unnecessary chiseling.

Advent of the power age has taken the foundations which were developed in the machine age, and on them built a structure in which consumption goods are produced in such a staggering amount, that these goods overflow community needs, and all the mass of people have to do is to reach out and gather them up, at prices which are so small as to be within the purse of everybody.

Is this the author's real vision? One doubts so. In fact, is he not dreaming something quite different, something which appears in his subconscious mind as frightening and frightful. He is perhaps afraid of the new order. And he is afraid that in the coming power age, consumption goods will indeed be so plentiful that they will almost be given away, but it will take no labor to produce them and a social order in which practically no one works will be unmanageable. One is justified in believing that is what his fears are.

To console the author we have the dole, under which we are rapidly developing about a fifth of our population so they will be of no value for labor. All we have to do, therefore, is to provide these with rent, clothes and food, as we are indeed doing, and we can trust to it that they will not interfere with the Power Age. In this fifth there may be some very fine individual brains, but they are lost in a large mass, and we shall never find them. That will not matter much, as they will learn to enjoy themselves where they are, and the Power Age does not require them.

But is this surmise correct? We are accepting this Power Age on the author's presentation of it. He says there is such a thing, and we are believing him. But reflection suggests how can he be right. Everything is not power production and power utilization, although these are everywhere. There are other things.

There is the little matter of a young lady's engagement. This event would not seem offhand to have any bearing on the case of the Power Age and the Machine Age, but the ideas of the engagement and the Ages persist in our minds. What will the result be? The young lady is conventional. She went through high school and college. She knows what the folkways are. And she knows that in this country the folkway of the diamond engagement ring is irresistible. Machine Age or Power Age, scarcity or plenty, production goods or consumption goods, luxuries or necessities, the diamond engagement ring is at the moment her outstanding social necessity. But unfortunately at the present time the fiancé has not the price. He is expecting a promotion in his work, has been expecting it for some time, but it has been delayed for some reason or other.

This story may well serve to portray a moral here. It is that free fodder may be poured into the laps of our numerous unemployed, and such pouring may destroy their work-incentives, but their social desires will be unabated, and will furnish an incentive.

I do not contend that the engineer is prone to say that his daughter cannot have a 5/8 carat diamond engagement ring, but must fall into line and forego this scarcity in order that the general public may have the plenty which Mr. Polakov says it can have. But it

(*Continued on page* 24)

THE TULANE UNIVERSITY LIBRARY NEW ORLEANS

QUALIFYING ENGINEERS IN CANADA

The Profession's Student System in British Columbia

Already a Developed Program

THE 1935 Year Book of the Association of Professional Engineers of British Columbia is a most illuminating publication and merits study and emulation upon the part of the profession in this country. Limited space prevents reproduction of many valuable interesting items. Copies may be obtained by addressing: E. A. Wheatley, Registrar, Association of Professional Engineers, 929-930 Birks Building, 718 Granville Street, Vancouver, B. C., Canada.

The cover page contains the following statement:

"An Interpretation of the Purpose of the
ENGINEERING ACT
In Every-Day English

"It is the custom on this continent to designate as an engineer the technically trained man of professional attainments, and also the ordinary mechanic or artisan who does not possess these attainments.

The Engineering Act deals with the professional man. The definitions therein distinguish between the professional man and the mechanic. It defines what is the 'practice' of the profession of engineering (that is, professional engineering), and states who is a professional man (that is, a professional engineer).

The assumption of the word 'engineer' by the mechanic is a source of confusion. Assuming the title 'engineer' does not qualify a man to be an engineer. Nor does the use of a title such as 'superintendent' or 'manager' exempt a person from registration, if his work is that of an engineer in its ordinary professional sense.

The Act forbids anyone who is not a licensed or registered engineer, to engage in any branch of engineering falling within the definition, and also forbids the adoption of the term 'professional engineer' or any part thereof by unqualified persons.

It is sometimes erroneously considered that consulting engineers or chief engineers only, are subject or eligible for registration. It should be clearly understood that the profession of engineering (that is, professional engineering), includes the work of the assistant engineer; the engineer; the assistant-chief engineer; as well as the work of the chief or consulting engineer."

Of particular note is the Chapter entitled "The Profession's Student System in British Columbia."

THE PROFESSION'S STUDENT SYSTEM
IN
BRITISH COLUMBIA

Based on three grades of registration: Final Professional Status or License; Engineer-in-Training, and Engineering Pupil; with the corresponding three Examinations: Professional Final; Intermediate and Preliminary.

It was at an early date apparent to the Engineering Profession in British Columbia, that the granting of a "License to Practice Engineering," connoted much more than the examination of the mature man. If he was found not qualified, it was only discovered at too late a stage in the man's life. Such an applicant of (say) 35 years of age rightly exclaimed: "Why was there not a system whereby I might have trained myself to your standard? I know no other work. It is too late to start now."

The Profession in British Columbia has devised a "professional system" to care for the growth and development of the student into the professional engineer. It comprehends both the university trained and the practically trained student of engineering.

The system in force in British Columbia is contrasted in the two following hypothetical Organization Charts. In Chart No. 1 is shown a representation of the engineering world before the professional system was created. It shows the world of routinists which lies at the bottom of the Engineering Profession, and in which the graduate engineer, and the well-qualified practically trained engineer (non-university) were so often lost and submerged. While in this body they were without distinguishing title or differentiation from the untrained, poorly qualified permanent routinist.

The fundamental duty of the profession under an Engineering Act is to provide a system whereby the graduate engineer and well-qualified practically trained student of engineering can be distinguished and differentiated and recognized as a professional man in the making. Graduation in itself is not sufficient.

Chart No. 2 portrays figuratively the Professional System with the professional ladder. All boys entering the gateway to the profession, both university and non-university youths, are herein invited to qualify for promotion by being "legally qualified" for any engineering position.

It is the considered opinion of the Council of the Engineering Profession in British Columbia that the active adoption of this system for boys by the employing engineer will result in a higher standard of engineering work throughout the Province. Every engi-

neer will have been formally trained from boyhood, and a compact and professional system will be evolved with striking advantages to all concerned. It shows the confusion of Chart No. 1 removed and the creation of an ordered system of promotion for the real student of engineering.

THE ROUTINIST PROBLEM

ENGINEER

(Including Chief and Assistant Chief Engineer)
Senior Assistant Engineer
Assistant Engineer — Assistant Engineer — Assistant Engineer
} Professional Engineers

A world of chaos and confusion through which the young professional man has to struggle.

Well-qualified registered assistant engineers; a few poorly qualified registered engineers; non-registered routinists, both well and poorly qualified; younger routinists, without knowledge of need for formal preparation and training for final professional status; young university graduates not affiliated to the profession, and all unconscious of the need for close contact with the Association and preparation for final professional status.

All these junior ranks embraced under one or two general and loosely used titles such as "assistants" or "draughtsmen." No distinction between the formally trained man and the routinist mechanic; partly trained and partly qualified, and narrowly specialized.

No system, in fact, confusion apparent; no regular and recognized process of training; lack of system compares unfavorably with all other professions; no recognition of the principle of registration within these ranks.

The graduate entered here and was lost and submerged in these routinist ranks.

The World of Assistants and Routinists

Emphasizing the lack of system amongst these lower ranks; non-technically trained men, holding similar positions to the technically trained man. Titles used loosely; No formal system of engineering training apparent.

The Chart does not show adequately the confusion which exists in this body of lower ranks. Titles once written down, due to their immovability, give an impression of orderliness, which does not, in the fact of things, exist.

THE CHART WITH PROFESSIONAL STAIRWAY

To Recognition and Success, Via the Professional System

Recognition of the Student of Engineering While in Routine Ranks

ENGINEER

(Including Chief and Assistant Chief Engineer)
Senior Assistant Engineer
Assistant Engineer — Assistant Engineer — Assistant Engineer
(Professional or Licensed Engineers)
} Professional Engineers

Graduate enters here as "Engineer-in-Training"

Junior Assistant Engineer (see below)
THE WORLD ..... OF ASSISTANTS
Junior (see below)
AND ..... ROUTINISTS
Senior Aid (see below)
(Engineer-in-Training)
WITHOUT ..... ORDER
AS IN ..... CHART NO. 1
BUT WITH THE ..... BEGINNING OF
Junior Aid (see below)
A ..... SYSTEM
RECOGNIZED ..... FOR
PROFESSIONAL ..... MEN
Engineering Pupil (see below)

Sub - professional work carried out by Engineers-in-Training, Engineering Pupils and Permanent Routinists.

The Professional Way

The confusion, however, is known to all. In other words, the "orderly" is holding himself out as a doctor; the trained doctor is doing the orderly's work. The mere routinist is found in engineers' positions, and the trained engineer found doing the routinist work. The routinist and engineer all embraced in the term "assistant," or "routinist."

A narrow ladder, holding forth promise of promotion and success to the student, by the way of the Profession's system.

The system is initiated by the employing engineer inviting all entrants to qualify for promotion by taking the professional system.

To be read in connection with the chart on previous page.

"Junior Assistant Engineer"

A few well-qualified registered engineers awaiting promotion, but with the great difference that they have the recognition of all concerned.

"Junior"

Experienced Engineers-in-Training (graduates and non-graduates awaiting final examinations—Graduates' Special Final; Non-University Ordinary Final).

"Senior Aid"

Graduate Engineers-in-Training (exempted Intermediate); non-graduate Engineers-in-Training (passed Intermediate).

"Junior Aid"

Engineering Pupil (Passed Preliminary)

"Engineering Pupil"

Engineering Pupil preparing to take Preliminary Examination (writing annual essay).

Examinations Leading to Registration Under the Engineering Act of British Columbia

To understand the system of examination, it should be borne in mind that they are divided into two distinct classes, corresponding to two classes of applicants, with varying needs.

Provision for the Non-University Youth

The Non-University Applicant—The practically trained youth who is not in a position to take a university course, but who is encouraged to be an aspirant for registered membership in the engineering profession. Where he has acquired matriculation status, the Preliminary, Intermediate and Final or Professional Examinations form the system which has been framed, and which is given below.

Does Not Take Preliminary at Begininng of Career, But Two Years After; Takes Intermediate for Further Three Years and Final After Further Three to Four Years

At 17 he may file his name with the Profession on being sponsored by his employer. At 19 he can take the Preliminary Examination. At 21 or 22, depending on progress, he can take the Intermediate, and at 25 to 27, the Final or Professional Examination. This applicant may be termed the ordinary candidate.

University-Trained Man Preliminary Is Waived

The University-Trained Man—The recognized university graduate is exempted from the Preliminary and Intermediate Examinations. He is granted engineering pupilage on application, after finishing the general subjects of a recognized applied science course, and on beginning the more specialized engineering subjects; because, by continuing his studies, he gives more or less a pledge of his intention to become an engineer.

In a five-year course, such as is given at the University of British Columbia, and which includes one year in Arts; two years of basal scientific subjects and two years of specialization the enrolled status of Engineering Pupil is granted in the Third Year after entering the university.

Intermediate Is Waived

On graduation from such an approved institution, the Intermediate Examination is waived, and the status of enrolled Engineer-in-Training granted on application.

Intermediate Required from Graduates of Unapproved Institutions

If the institution has a curriculum and conditions of studentship not approved by the profession, the Intermediate may possibly not be waived, and the ordinary Final Examination, as set out in the Examination Syllabus, will be required.

Adaptation of Final Exam. to Graduates of Approved Colleges

For graduates from approved institutions the Final Examination will take the form of a thesis or engineering report of a minimum of 5,000 words, based on the work enjoyed or undertaken in the four years subsequent to graduation. In special cases the thesis may take the form of an engineering design.

Grades of Registration Granted by the Profession

Preliminary Filing of Name

The standing of youths of 17 who have passed junior matriculation, and who are sponsored by two persons of recognized standing.

"Registered Engineering Pupil"

The standing granted to youths of 19 years who have passed the Preliminary Examination. Age limit, 23. (Students in third year of engineering at universities are eligible for this standing without examination.)

"Engineer-in-Training" (Intermediate Status)

The standing granted to applicants of 22 to 26 years of age who have passed the Intermediate Examinations, or to graduates in applied science from approved universities, in whose case the examination has been waived. Age limit, 28, subject to extension under special circumstances.

"Registered Professional Engineer"

The standing granted to those of 23 or over who have had the necessary engineering experience in a subordinate position, and who have passed the Final Examination (including the Ordinary Final for non-graduates, and the Special Graduates' Final Examination—Thesis.)

IMPORTANT—It should be noted that passing this examination, and obtaining registration, indicates that a candidate has carried out the minimum requirements of the profession, for recognition as a junior professional engineer. The candidate now only enters the first stage of his professional work.

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E. C. P. D.

Program of Certification Referred Back

Annual Report to Engineers' Council for Professional Development by Committee on Professional Recognition

Adopted October 8, 1935

At the Annual Meeting of E.C.P.D., held at the Engineering Societies Building in New York, on October 8th, the following resolution presented by the N.C.S.B.E.E. was adopted:

E.C.P.D. regrets and disclaims any statement made on its behalf that may be construed as unfriendly towards the engineers' registration movement, as represented in this body by the National Council of State Boards of Engineering Examiners, and furthermore disclaims any intention to set up a certifying agency in conflict with the legal registration of engineers by State Boards, or to parallel or supplant the National Bureau of Engineering Registration. Further, in order that statements capable of misrepresentation with respect to the interest represented by any of the constituent bodies of E.C.P.D. may be avoided, the E.C.P.D. Information Committee shall include representatives of each of the 7 constituent bodies, and all future publicity releases shall be subject to the advance review and approval of each said representative.

In the report of this Committee presented in October, 1934, the possibility of misunderstanding about the functions of E.C.P.D. was pointed out. One paragraph from that report may be restated with good effect:

"There is a general view that E.C.P.D. is setting itself up as a central examining body whose findings are binding on all bodies. This is not the case and pains should be taken to explain that E.C.P.D. is rather a convenience whereby the lack of uniformity in methods of professional recognition may be coordinated and standards raised. It is obvious that the prerogatives of the various state boards of examiners or of the societies cannot be preempted by any single body. But the multiplicity of standards offers an excellent opportunity for a representative central body to render a great service to the individual members of the profession."

Unity in the approach to the problem of establishing adequate means for recognizing the engineer as a professional man is exemplified by the Engineers' Council for Professional Development. Three avenues toward recognition now exist. The engineering schools provide limited recognition through varied processes of granting the professional degree. The second avenue is admission to the corporate membership of the large engineering societies. The only avenue for recognition having legal sanction is through professional registration. E.C.P.D. constitutes a deliberative and advisory body, the effort of which is to be influential in harmonizing the standards of these several agencies and bringing about a generally accepted concept of what may be termed the recognition of an engineer.

The program such as is emphasized by E.C.P.D. admittedly is not immediately attainable. Before it can be established certain basic elements should receive attention and be determined. These elements are: first, a program of post-collegiate training with emphasis upon the cultural and social aspects of the engineer's life as well as his training and experience in pure technique; second, the development of a standard by which to measure this post-collegiate attainment which will be adopted without further material question by the universities, by the boards of engineering examiners throughout the United States and by the engineering societies.

The registration of engineers is an important agency of recognition because it legally sets the standard for admission to the practice of the profession. Registration is operative in some form in 35 states and thus not only is but must be acknowledged as an established agency through which the professional status of an engineer will be recognized by himself, by the profession and by the public. Furthermore, registration is for the engineer himself of practical value since it provides protection from those who would practice without qualification. It also provides prima facie evidence of individual capacity. Registration of engineers, however, as it exists under the 35 states is not as yet sufficiently uniform to be fully satisfactory. An analysis of the provisions of the 35 states' registration laws is appended to this report.

Exemption from registration is as yet too varied and reciprocity is not generally acknowledged because of the difference of requirements in the several states. An engineer who may be exempt from registration in one state would find himself required to register under the laws of another, perhaps an adjacent, state. Under such conditions reciprocity between the states is not as yet practicable with full vigor. The several registration laws are subject to the approval of the respective State Legislatures.

The registration of engineers, it appears therefore, is an important element in this unified approach toward the establishment of adequate means for recognizing the engineer as a professional man. E.C.P.D. should therefore address itself to rendering all possible assistance to effect uniform registration laws in states which now do not have them, to improving the registration laws where they now exist and to effecting among these present laws a higher degree of uniformity as to requirements and as to form of recognition. A greater degree of unity of opinion with respect to those who may properly be subject to exemption is also a desirable objective.

This is just a part of the work and, like other features, such as the granting of professional degrees and admission to proper membership in the engineer-

(*Continued on page* 23)

ENGINEERING ONE OR MANY PROFESSIONS

Law and Medicine Equally Diversified Callings

The profession of engineering is today, so far as the general public is concerned, the least understood, the least appreciated, and the least recognized of the learned callings. In seeking the cause for this state of affairs one does not have to travel very far into the realm of reason to eliminate the general public as the author thereof and to come to the conclusion that engineers themselves have misled those outside the profession.

That the whole is equal to the sum of its parts and that no part can be greater than the whole are axiomatic to the mathematician, the logician and others are equally tenable where human institutions are concerned. True, it is not always easy to identify the whole by the part, but if those callings of life which apply the mathematics, physics and chemistry to the matter of earth are not of common genesis then the precepts of reason are of little value.

Unfortunately, practitioners of engineering are somewhat inclined to scorn abstract reasoning. Such an attitude which savors strongly of unwarranted ego, has however, brought its own reward and a little of the homely philosophy of that great Scotch Bard, Bobby Burns,

> "O wad some power the giftie gie us
> To see oursels as ithers see us!
> It wad frae mone a blemder free us,
> An foolish notion"

might well be applied to many of us.

Engineering has become a profession of specialties, but so, too, have law and medicine. The surgeon, the homeopath, the gynecologist, the obstetrician, the psychiatrist, the orthopedist, the pathologist are specialists but they are none the less members of the one medical profession because the premise of their calling is the human body. Think of the scope of a calling that has specialists in civil, criminal, corporation, real estate, admiralty, international, administrative, patent and numerous other branches of what is universally recognized as one profession despite the fact that it deals with laws which differ in every state and nation under the sun. Regardless of countless ramifications the basis is everywhere the decrees of men for their own protection. By the same tenets engineering is as truly one profession premised upon certain physical laws and properties of nature as is medicine or law with its many ramifications and subdivisions.

Two great causes of the lack of recognition accorded the profession are the indiscriminate use of the term engineer and the ever-increasing tendency to create many professions out of what is fundamentally one. Engineering is a single profession, based on certain physical laws and properties of nature, and, regardless of specialization in practice should be so considered and so recognized by the public, by engineers and by institutions of learning. Other professions comprehend just as many ramifications but their practitioners have realized the unity of the premises upon which they are predicated.

The engineer himself, together with the institutions of learning, has offended most, by creating and recognizing meaningless and improper names and designations for subdivision of the profession. As an example, civil and mechanical are supposed to distinguish between phases of the profession and in many cases to indicate separate professions. But do they correctly convey their purport? Certainly not to the layman. Even a school boy knows that the terms civil and mechanical are not comparable.

Engineering was originally, and might still be correctly termed, civil and military to distinguish the works of peace from those of war, but mechanical, electrical, chemical, etc., do not permit of such distinction for they are merely sub-divisions of civil or military engineering. Laymen can hardly be blamed for emulating the profession itself in the indiscriminate use of the term engineer. This is a matter that calls for consideration by practitioners and by directors of engineering education.

The illy conceived idea of sending a boy forth from school trained as a professional specialist is unique with the engineer. No other profession attempts to educate a man as a specialist until the world and the state first recognizes him as a general practitioner and possessed of the basic knowledge common to the profession as a whole. Recognition of professional skill must be the result of actual accomplishment. Regardless of intensive specialistic preparation it is only when thrown entirely upon his own responsibility and resources that a man can develop as an actual specialist and prove his value as a practitioner. In any event, the commonality of fundamental training and knowledge is the basis upon which specialists in any profession build.

The professions of law and medicine are recognized as such not alone by the state as a political entity but by the public at large. Up till within the past few years engineering, which aside from theology requires unquestionably the most intensive scholastic preparation of any profession, was not so recognized even legally. To date its recognition by the public is practically nil. It is only the egotistical engineer, who thinks he is rated by others as he rates himself. To the members of other professions as well as to the layman at large he is some sort of a technician, little, if at all, superior in training and knowledge to the electrician, statistician, mechanical dentist, mortician, realtor and countless other more or less technical practitioners. His severe training and magnificent accomplishments are lost sight of.

Engineering is unquestionably the oldest and most accomplished of human professions. Its practice requires a greater breadth of knowledge than any other calling. Its tradition and contribution to

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AN ENGINEER'S VOW
OF
SERVICE

By

ENGR. D. B. STEINMAN

We dedicate ourselves to the service of mankind as members of the Engineering Profession.

We consecrate our professional knowledge and skill to the advancement of human welfare, safety and progress.

As we benefit by the technical knowledge and public esteem won for the Profession by the Engineers who labored in the past, we shall ever strive to augment that heritage before passing it on to the Engineers who are to follow.

We therefore affirm our guiding purpose:

So to live and work as to justify the trust and confidence reposed in the Engineering Profession.

To carry out professional engagements with generous measure of performance, and with fidelity towards those whom we undertake to serve.

To foster a spirit of courteous consideration and fraternal cooperation within the Profession.

To extend encouragement and a helping hand to younger Engineers and to those in need.

To place Service before profit, the honor and standing of the Profession before personal advantage and the Public Welfare above all other consideration.

WHAT IS WEALTH?

Must Humanity Depend Upon a Single Medium

By INGENIEUR

From 1932 *July Issue of American Engineer*
(Reprinted for the purpose of calling attention to changes made subsequent thereto).

FOR more than a century, or since Nathan Rothschild, apprised in advance of the rest of England of the outcome of the battle of Waterloo, bought and sold stocks in such manner as to net over a million pounds profit, an enormous sum in those trying days, the marts of the world have resembled gaming tables rather than centers of distribution for creative effort. Great fortunes have been built up by means of speculation and have placed in the hands of a comparative few control of the medium of exchange upon which so much of humanity must depend for its very existence. The absolute necessities of life have become unattainable except through that medium, the possession of which has been the obsession of mankind.

Such a situation is not alone a reflection upon the moral sense of man but conducive of an eventual disorder so widespread as to promote chaos instead of civilization. One does not need to be a very profound philosopher to realize that the creation of wealth, which latter is, after all, but a store or accumulation of those things which men desire to possess, cannot be indefinitely equated with a single element mined from the bowels of the earth. Suppose for a moment that the supply of gold ceased entirely, would wealth remain stationary, whilst humanity increased and science and machinery multiplied the potential productive powers of mankind? Would this nation, possessed of a superabundance of food, clothing and shelter, starve to death or succumb to the elements if all the gold in the mints and banks of the United States were to be dissipated by explosion or other unforseen catastrophe? It would indeed be a sad commentary upon human intelligence and human morality to make such an admission. Yet, the same is an inevitable deduction resulting from the concept of wealth which is today the basis of dogmatic pronouncements by so-called experts upon both sides of the Atlantic Ocean.

The 19th century economists and financiers have so strongly dominated the affairs of mankind that the scholastic world has been teaching youth to recognize capital as co-equal with nature and labor in the production of wealth. The causes of wealth are dogmatically set forth as nature, labor and capital. Such a doctrine is fundamentally wrong, with the result that the application must invariably lead to unhappy conditions. Nature and labor alone are causes. Capital is primarily an effect, notwithstanding its usefulness as a secondary or contributory cause for expansion. A surplus of food is fundamentally capital, but its value as a cause can scarcely be advocated by any rational process of thought. Only the existence of a medium, so relatively permanent in nature and small in quantity that possession in bulk is humanly possible, gives to the surplus the appearance of capital. The wonder is that the system has not long ago collapsed.

That the standard of wealth has survived as well as it did can be directly accounted for by the fact that science and engineering have contributed so much to civilization during the past century and the changes have come so fast that no widespread liquidation took place within that period, with the result that credit was accepted in lieu of the medium of gold. It required a catastrophe such as the World War to bring about the necessity for a liquidation and an appreciation of the fact that the supply of gold, or of any other single element, cannot keep pace with the creation of material things and the production of the necessities and conveniences of life, without giving to that gold a value such that its possession by relatively few can deprive the rest of mankind of any share in the wealth it has created.

Engineers as the greatest creators of wealth and of urban civilization should give themselves seriously to the consideration of the great world problem of effecting a wider distribution of the real wealth of mankind. Gold or any precious metal is not in itself wealth. Perhaps no one contends it is, but possession of the metal has been so long accepted as such that a nation or a person devoid of gold can cause suffering upon the part of those living in the midst of a superabundance created by their own constructive efforts. The fallacy of such a system is gradually becoming manifest and it must eventually give way to something which will afford greater protection to the human being who is willing to labor for the right to live.

The engineer enjoys a unique position. First he, more than any other, has produced the material wealth of the world; secondly, he has never been led astray through reasoning from false premises. To him every step of the process must be proven before proceeding. Whoever is to develop a plan for the betterment of human society must cast aside the ramifications of man-made financial doctrines, attack the problem with fundamental principles and keep them always within the province of his scheme.

The first requisite of an approach to the all-consuming problem, is the realization, long overdue, that the so-called financial expert and his theories, which have been preached as gospel from the housetops for the past generation or two, are about as essential to the contentment and preservation of society as was the King, who knowing all, owning all and determining all, could do no wrong. A new order is at hand. It will be a planned order in which many will participate. Whether it will permanently be for good or for evil remains for posterity to contend with. In any event some plan for relieving the present paradox —of the greatest want in history in the midst of the greatest abundance ever known to man—must be conceived. For the development of such a plan the engineer is singularly equipped. To him humanity must turn, at least temporarily, in its endeavor to reconcile a changing civilization with an unchanging humanity.

INGENIEUR.

ITEMS OF GENERAL INTEREST

NEWS, REPORTS, COMMENTS

NATIONAL SOCIETY ACTIVITIES

Correspondents and readers are invited to submit for publication items of interest to the professional engineer of the country. Such material should be forwarded as quickly as possible in order to keep news up to date.

NEW YORK

Examining Board Reports

During the year which ended June 30, 1935, the State Board of Examiners of Professional Engineers and Land Surveyors held 12 meetings and considered 2187 applications for licensed engineers of which 559 were rejected, 730 held for written examination, 155 held for further consideration, and 743 recommended for licenses. The total number of applications considered during the fiscal year ended June 30, 1934, was 1,125 and during the year 1933, 1,060.

The number of applicants who tried the written examinations in January and June of this year was nearly double the number for 1934, but the percentages of those passing and failing has remained fairly constant. Six hundred forty-eight candidates appeared at the examinations held in January and June of this year and of these 494 were recommended for licenses, 40 were rejected, and 114 were held for reexamination in one subject.

The net amount received from fees during the fiscal year ended June 30, 1935, was $40,404., the expenditures were $17,036.02, leaving a surplus of $23,367.98. During the two previous fiscal years the net receipts from fees were $29,186, and $22,955.30.

During the year no charges have been submitted to the Board seeking the revocation of the licenses heretofore granted.

One amendment to the law was made as the result of legislation enacted during the 1935 session of the Legislature. This referred to the practice of engineering by corporations. Under its provisions no corporation may in the future be organized for the purpose of carrying on an engineering practice. The corporations, however, that were organized prior to the enactment of this amendment to the licensing law may continue to carry on an engineering practice.

At the June, 1935, examinations for Professional Engineer's license in New York State, 337 candidates took the written examinations. Of these, 266 (or 79 per cent) passed; 60 were conditioned (and are required to repeat the written examination in one subject, and 11 failed) and are required to repeat the written examinations in all subjects assigned to them). In addition, 14 candidates took the written examinations (in Mathematics and Surveying) for Land Surveyor's license; of these, 8 passed and 6 failed.

The personnel of the Board has remained unchanged and is as follows:

David B. Steinman, Chairman; Erich Hausmann, Vice-Chairman; Roy G. Finch, Secretary; Albert H. Hooker, Virgil M. Palmer.

Western New York Conference
Six Chapters Hold Joint Sessions

Through the courtesy of P. B. Mansfield, of Jamestown, the following brief report has been transmitted to the American Engineer:

"Engineers from six chapters of the New York State Society of Professional Engineers met in the annual fall session in the Hotel Jamestown Saturday afternoon and evening, September 28th.

Following registration and committee meetings a forum was conducted by Engr. Stewart S. Neff, President of the Erie County Chapter on the subjects of membership and ethics. Outlines of present practice in these matters were given by Engr. Alfred L. Williams of Niagara Falls.

The accomplishments of the last year were reviewed by the National Society President, Dr. David B. Steinman, and the President of the New York State Society, Prof. John C. Riedel of Brooklyn.

Arrangements for registration and entertainment were made by a local committee of which Engr. Walter F. Shaw was chairman, and were handled through the Convention Bureau.

A banquet to which several non-professional residents of Jamestown were welcomed, was held in the evening. Engr. Leo Scanlon served as toastmaster and introduced the various chapter presidents as well as the State and National officers. Lucian Warren, of the local Chamber of Commerce, welcomed the professional engineers to the Chautauqua region and Engr. Chas. G. Locke, of Salamanca, described some early experiences in reviewing the work of the surveyors of the Holland Land Company. Engr. Howard S. Thomas, President of the Monroe Chapter gave a history of the technical societies of Engineers for over one hundred years.

In reviewing the rapid progress of registration law enactment, Dr. Steinman pointed out that already thirty-four states have laws limiting the practice of engineering to those who have presented satisfactory evidence of competence. Dr. Steinman also pointed out the historical significance of the meeting, it being the first group meeting in the country at which the title "Engineer" was used in addressing any professional man of that rank. This practice was recently established from Washington at the same time that the use of the word was discontinued in describing an operator or engineman."

New Licenses

The following were granted licenses on September 13th:

Those marked * are land surveyors only.

18 Addy, John G., Jr., 10906 111th St., Richmond Hill, L. I.

18 Anderson, Edwin E., 47-22 Kissena Blvd., Flushing, L. I.

47 Andrews, Leon E., 213 Kensington Ave., Trenton, N. J.

13 Barton, Theophilus F., Gen. Elec. Co., 570 Lexington Ave., New York, N. Y.

20 Bell, Andrew F., 167 Tompkins St., Stapleton, S. I .

48 Bennett, Claudius E., Federal Power Commission, Washington, D. C.

17 *Bonaparte, Claude A., 116 North St., Middletown, N. Y.

42 Collamer, Ernest D., Ballston Spa.

28 Donaldson, George M., 10 N. Fulton Ave., Mt. Vernon, N. Y.

47 Farmer, Paul M., 40 Myrtle Ave., Maplewood, N. J.

19 *Flynn, William S., 83 Third St., Troy, N. Y.

11 Fredericks, John E., 89 East Ave., Rochester, N. Y.

14 Freeman, Andrew Y., 1243 Norwood Ave., Niagara Falls, N. Y.

12 Haas, Rudolph, 200 8th Ave., Sea Cliff, N. Y.

13 Hawkins, George L., c/o Lockwood Green Engrs., Inc., 30 Rockefeller Plaza, N. Y. City

38 Hurley, J. Raymond, City Hall, Canandaigua, N. Y.

17 Kehoe, James L., 213 N. Miller St., Newburgh, N. Y.

12 Keplinger, William L., 103 Sunset Dr., Hempstead, N. Y.

14 Lardie, George L., Union Carbide Co., Niagara Falls, N. Y.

47 Macdonald, Eugene L., 29 Stanford Pl., Montclair, N. J.

48 McDonough, Clarence, Westchester Apts., Washington, D. C.

13 Osborn, Harold, c/o Lockwood Green Engrs., Inc., 30 Rockefeller Plaza, N. Y. City.

13 Sample, Coleman R., 39 Broadway, N. Y. City.

10 Schmich, John E.

13 Smith, Hugh L., Gen. Elec. Co., 570 Lexington Ave., N. Y. City.

10 Snow, Herbert E., 340 E. 19th St., Brooklyn, N. Y.

47 Stanley, Thomas L., Oak Lane, Essex Falls, N. J.

24 *Stark, John V., 108 Stark Ave., Penn Yan, N. Y.

3 Ware, Howard T., Box 502 Union Station, Endicott, N. Y.

13 Weiler, Edward N., 27 W. 55th St., N .Y. City.

13 Westbye, Johannes, Gibbs & Hill, Penn Station, N. Y. City.

12 Wilson, Lancelot E., Cor. Washington St. and S. Grand Ave., Baldwin, N. Y.

THE COMPLETE CRAZINESS OF WORK RELIEF

Johnson's Announcement the Last Straw

(From News and Opinion—October 1st, 1935)

Work relief in New York City reached its ultimate foolishness on September 28th when General Johnson announced he would have to advertise for 8,600 workers to fill skilled positions for which no one was available on relief rolls. Included were 2,335 workers needed for construction work! Stone masons to the number of 694 must be recruited at the prevailing union wage, of course; 292 ornamental iron workers are required; 669 timbermen and so on through the trades.

If this indictment is not enough to indicate the impracticability of the day labor methods of work relief in the construction field, we present further analysis of the General's needs. The government in order to pursue its method must advertise for 600 or more supervisory men. Included are 157 superintendents, 150 general foremen, 121 foremen, and 197 engineers. That is certainly helping private industry in our field.

News and Opinion knows of nothing more cockeyed in the whole history of work relief than this attempt to take over the buildin g and construction business, against specific Congressional instruction to the contrary (as noted elsewhere in these columns). Hundreds of contractors are struggling to hold their skeleton staffs together. These men and their efficient, skilled staffs under the President's own executive order should be used on a perdiem basis to supervise Johnson's projects. They would save the government both money and embarrassment.

If there was ever a time to prove the practicability of the "facilities of private enterprise" against the impracticability of work relief, it is now.

ALABAMA

Enacts Law—Joins Procession

Alabama has just passed an Engineers' Registration Law. This makes a total of 35 Registration States, and the *seventh* State to enact an Engineers' Registration Law this year. If Texas is included, having a law for Surveyors only, the present total is 36 states, plus 3 Possessions.

MAINE

Organization Progress

Plans for the organization of a Maine Society of Professional Engineers are progressing and application for membership in the assembly of the National Society is expected shortly.

Secretary Conlon, in his recent trip to New England, conferred with leading engineers in different parts of the State and reports augmented professional interest since the enactment of the registration law.

CONNECTICUT

Jas. R. MacIntyre, Secretary

At a recent meeting of the Connecticut Society Engr. James R. MacIntyre, of the Nash Engineering Company, South Norwalk, was chosen Secretary to replace Engr. F. M. Brown whose resignation was caused by the fact that his business compelled removal to another State.

The Society contemplates a drive for membership that will permit a strong organized campaign to enforce compliance with the recently enacted registration law.

WASHINGTON SOCIETY

The Second Meeting of the District of Columbia Society of Professional Engineers was held at the Mayflower Hotel on Tuesday, September 17th.

Amongst those who addressed the meeting were Hon. Charles A. West, Under Secretary of the Department

of the Interior; Mr. W. E. Reynolds, Assistant Director of Procurement, Public Works Branch of the Treasury Department and Engineer David B. Steinman, President of the National Society of Professional Engineers.

The officers of the District of Columbia Society are: President, John W. Dunham; Vice-President, Joseph Barnett; Secretary, Stanley Waldorf Moulding; Treasurer, Milton Kellert; Directors, Miles E. Myers and George Edmund Geyer.

WISCONSIN

Adopts Professional Unity

In keeping with the trend of thought born of experience, the Registration Act of Wisconsin has been amended to include all divisions under the general heading of professional engineering.

The new law, which was approved by Governor La-Follette on Sept. 5th, provides for the registration of both architects and engineers. The fee for registration is being reduced from fifteen to ten dollars and there is no requirement as to classification of professional engineers according to their respective fields of activity. The existing Board of Examiners opposed subdividing the profession, although there was strong arguments pro and con during the drafting of the act.

Under the new set-up the previously existing Board of Examiners, consisting of nine members, including the state architect, the state engineer, the dean of the college of engineering of the state university, three architects and three engineers, will continue in office until the expiration of their original terms. Appointments to the board are to be made by the Industrial Commission upon recommendation from the architectural and engineering societies of the state.

The act defines the practice of professional engineering as follows: "Any professional service, requiring the application of engineering principles and data, wherein the public welfare or the safeguarding of life, health or property is concerned and involved, such as consultation, investigation, evaluation, planning, design, or responsible supervision of construction, alteration, or operation, in connection with any public or private utilities, structures, bridges, industrial plants, buildings, machines, equipment, processes, works and the structural members of other than industrial buildings."

In the Assembly the amendment, introduced by Assemblyman Novotny, was first referred to a committee, which recommended indefinite postponement. Then continuing along its devious course the bill was referred to another committee, which submitted a favorable recommendation. When the bill was put to a vote the assembly passed it with a vote of 75 to 10, and the Senate concurred by a vote of 29 to 0.

A COMMENTARY

Worth Repeating and Remembering From Engineering News-Record "Questionable Principle"

"Works Progress Administration project lists recently issued include many undertakings that cannot be classed otherwise than as regular city work. They are by no means the added social improvements, the extra budgetary operations, which were to be the means of providing relief work. This regrettable development indicates the same failure to adhere to fundamental principle that characterized the C.W.A., it needs no deep study to show that when the government constructs a city's normal improvements by relief labor, it puts the city on the dole just as truly as the workers are on the dole. And it is much worse for a city to go on the dole than an individual. The process, moreover, holds out a direct threat to normal recovery, for the work thus transferred to the relief program robs the future market; every job given to a relief-roll man on budgetary construction means one less job for regular wage earners next month or next year. In short, the procedure is not a one financially immoral but it is the worst kind of economics. Only narrow-visioned relief planning could defend it, and even the relief worker is apt to find that it creates new problems larger than those which it seems to solve. If the works program is to make further progress toward a sound and constructive condition, its relief operations must be kept out of the field of normal budgetary work."

ONE MAN'S OPINION

Making Engineers Corps 'Consultants' to W.P.A. and P.W.A. Not Enough to Straighten Out 'Dizzy Mess' Let Them Do the Whole Job General Advises

By

HUGH S. JOHNSON

"The U. S. Corps of Engineers have been made "consulting" engineers for W.P.A. That isn't enough.

In both P.W.A. and W.P.A., billions of dollars have been "allocated" to do thousands of engineering jobs in hundreds of places. The whole program is a dizzy mess cooked up under rush orders, and in W.P.A. in a mad race to get "unimportant" W.P.A. engineering projects approved faster than P.W.A. could get "important" engineering projects approved. There wasn't an engineer on that W.P.A. job—only socialicians.

In P.W.A. there was so low a limit on the per-man cost of projects as to rule out any real construction.

In the great Hopkins-Ickes race to grab the relief work dough, a lot of P.W.A. estimates were hastily "revised" to show a lower per-man cost on paper regardless of fact.

Now the heat is on to get all this work wage started in order to nail down the appropriations.

The only certain thing about these mad-rush projects is that they are way under on cost estimates and no better engineered than a chicken-coop. If it isn't immediately controlled it is catastrophe.

There has been, for three years, one way to avoid this whole mess—to call in the Corps of Engineers, the one body in the world proved, organized, competent and experienced for this kind of work.

There it stood unused during the whole nightmare. There it still stands but as the thing becomes unmanageable in the hands of the starry-eyed socialicians, the Corps of Engineers is called on "to consult." You might as well call in Dr. Will Mayor to consult with a corn-doctor over a man with a burst appendix.

Why isn't it put in there with full responsibility and authority to avert a wreck—exactly as it was to make a canal instead of a mess out of Panama? Just one single reason—because that would hurt the feelings of Harold and Harry—and also of Aubrey and Larrie and Corrie and Jakie and Horatio.

I'd pay a whole lot not to hurt their feelings, too—but not four billion dollars worth of boondoggling and blunder."

NOTICE

ENGINEERS WANTED

Wanted applications from Electrical and Mechanical Engineers meeting the following requirements:

(a) *Electrical Engineers*:
Design and layout and specifications for light, power, telephone and miscellaneous circuits—drafting board job—prefer engineers previously associated with Architects or Contractors.

(b) *Mechanical Engineers*:
Design, layout and specifications for heating and ventilating elevators and miscellaneous mechanical equipment—drafting board job—prefer engineers previously associated with Architects or Contractors.

Applications for above positions may be had by applying to your State Society Secretary.

ENGINEERING ONE OR MANY PROFESSIONS

(*Continued from page* 17)

the march of civilization warrant recognition from a world which today is entirely dependent upon it for the preservation and progress of that civilization. To establish engineering as a learned profession its unity must be made apparent to the society which it serves. To permit recognization of, or to create divisions thereof, as separate professions is to invite and encourage the confusion that made it possible for another calling to successfully maintain before a Court of Law that there are at least twenty-seven separate kinds of recognized engineers in one state. The power, and the value to society, of a single engineering profession is unlimited; the failure to appreciate and consummate the same invites criticism, misunderstanding and attack and will eventually relegate the engineer to the position of a subordinate technician working only under the direction of others. A house divided against itself cannot survive. The military tactics of Napoleon are apparently more familiar to and better appreciated by others than by members of the engineering profession.

A common basic training, a common desire to protect and promote the public welfare and common desire for commensurate recognition call for a united profession and the National Society of Professional Engineers affords a common meeting ground for all licensed professional engineers. Its goal is a unified profession. Its hope is the enrolled support of every professional engineer in the United States.

Editor.

E.C.P.D. PROGRAM OF CERTIFICATION

(*Continued from page* 16)

ing societies, is a matter which cannot be achieved all at once for reasons both within and without the profession itself.

The establishment by E.C.P.D. of specific means for recognizing the curricula of engineering schools and the cordial reception with which it has been received indicates that progress towards unity in training and recognition can be made.

A minimum standard for the granting of professional degrees is desirable but the granting of degrees is a charter responsibility of college faculties and college administrative bodies.

The granting of corporate membership in engineering societies is a matter of concern to their respective governing bodies, as related to the principles which hitherto they have felt to be of great value. Recognition of a desire for uniform criteria for admission to corporate membership in the engineering societies is exemplified, however, by the fact that the American Society of Civil Engineers and the American Society of Mechanical Engineers each now have in process constitutional amendments approaching that objective.

Estimates will vary as to when either of these two procedures may be more universally recognized and accepted as harmonizing with the attainment of professional status and much remains to be studied and evaluated before full attainment can be expected. While this is similarly true of the time required to perfect the registration laws, there appeared, however, in them to be a more immediate prospect of a unified approach and a uniform result. All assistance which E.C.P.D. can render therefore toward the engineering registration movement should be constantly and persistently applied.

The work of E.C.P.D. obviously may not be expected to be consummated in perhaps less than a decade but progressive steps are and should be attainable through careful study of the problem and education of those most vitally interested, namely, the members of the profession itself. A high degree of patience obviously will be required of all concerned.

In view of the fact that some important misunderstandings have arisen in connection with the Program of Certification adopted by E.C.P.D. in October, 1934, (Appendix DI, page 38, Second Annual Report of E.C.P.D., 'Program of Certification into the Profession'), and in view of the fact that only four participating bodies so far have approved the Program and in view of the fact that the proposed time schedules in that Program are already out of date, the Committee on Professional Recognition, at its recent meeting, voted to recommend to E.C.P.D. that the Program of Certification be referred back to the Committee on Professional Recognition for further study and clarification.

QUALIFYING ENGINEERS IN CANADA

(*Continued from page* 15)

Temporary Licenses

Non-residents of the Province of British Columbia, other than bona fide consulting engineers, who seek to practice temporarily may obtain a license on presenting a full account of their experience and qualifications, and on passing an examination if such is required by the Council.

Bona fide foreign consulting engineers, not being residents of the Province, may practice temporarily in the Province, on giving notice of their desire to do so. Proof of the bona fides and satisfactory evidence of qualifications may be required by the Council.

The Council confines this privilege to actual consulting engineers who maintain an independent office, and who are by common repute consulting engineers. A person who merely calls himself a "consulting engineer" cannot claim the privileges of this Section.

Graduates' Theses

Graduates from Universities other than the University of British Columbia may find difficulty in understanding the system. If they arrive in the Province during the first four years immediately subsequent to graduation they are eligible, on application, and with-

out examination, to receive the intermediate status in the profession, namely, Engineer-in-Training. If their arrival in the Province is after the first four years immediately subsequent to graduation, they are eligible to make application for either temporary license or registration (Residents' License), and, in their application form, they should submit the titles or subject matter for a thesis or engineering report of a minimum of 5,000 words to be subsequently presented. The Board of Examiners, where necessary, will correspond with the graduates, and advise them as to the suitability of the subject-matter suggested, and discuss the best methods of adequately dealing with the subject, in order that a worth-while thesis, worthy of receiving professional recognition may be submitted.

Graduates from the University of British Columbia may shorten the time usually required to obtain final registration as follows:—namely, two to three years after graduation, to submit with an application form for their final License to practice, the titles or subject-matter of a suggested thesis. The Board of Examiners will advise them as to the best method of dealing with the subject. Graduates can thereupon take the last one or two years of the four years immediately following their graduation to prepare an adequate thesis. The purpose of this refinement of the system is to facilitate the graduate in preparing a worth-while thesis, and in order to enable him to obtain his registration as soon as possible after the four years immediately subsequent to graduation have elapsed.

Variations to Theses

With the consent of the Board, the thesis may take the form of an Engineering Design. In all cases the graduate should obtain the approval of the Board.

Exemption From Thesis

Exemption will be granted in very special circumstances only. At the present time graduates of the year 1920 and previous years may be exempted on application.

CHANGING CIVILIZATIONS

(*Continued from page* 12)

does seem to me that mass production, machine ages, power ages, and all such things are a very limited kind of engineering, and the engineer misses much of understanding on the part of the public so long as his mouthpieces conceive a society founded on these bases.

And I hark back to the definitions of engineering, beginning with the classic of Tredgold: "Engineering is the harnessing of the materials and forces of nature" and ending with the American Engineering Council's expansion: "Engineering is the harnessing of the materials and forces of nature for the benefit of mankind." I think that engineers so far have largely subverted this definition to: "Engineering is the harnessing of the forces of mankind for the benefit of the forces and materials of nature."

I would rather think instead that the engineer has not influenced our civilization very greatly; that engineers have not changed our styles, that advancing culture has changed the styles, and what the engineer has really done is to make the wish the fact. The technocrats would have it that engineers caused the depression. The idea behind the power age, something associated with engineering, is that the engineers are responsible for something which should not be. All this is wrong. The professional engineer is responsible for nothing against the public interest. Above all he is not responsible for the unemployed. Instead, he is responsible for employment.

What has the future in store for the engineer? In my mind he has solved the problem of the mass production of what I like to call unstyled, standardized commodities. Now he should get to work on the styled social necessities. The field for these is enormous, and the solution of their distribution is engineering. This quality era has no dependence on the quantity of electricity produced in a power age; styled social necessities can sometimes be produced with very little physical energy. Am I speaking about a return to craftsmanship, in order to put people to work? I do not think so. I am speaking as much, I think, of the acceptance of leisure in order that people may have time to crave their social necessities. How these necessities can be supplied, in what kind of an economy, is a problem for the engineer to give some thought to. But when he does, let him not start off with his old mistake of thinking of what materials and forces he himself has at his disposal, to frame a society to suit him, but rather let him think of a higher standard of living for the country, of what the people would get if they could, and then let him think what is missing in his own proposals for supplying them. He will admit that the missing factors are not in his control, and he must then say so. He must under no circumstances continue with the attitude "We have the means for everything you want; we have the materials and forces for the age of plenty." That is quite wrong.

Perhaps the fallacy has been in assuming that most people have less than they ought to have. The situation is just as often that most people have more than they can handle. And if you cannot agree with this, substitute "more problems" and we shall agree. And that will be to the good for us engineers. For when we set up the machine age, we did not hand the public a problem; they handed us one. And the same thing with the power age. That is our own problem, not that of the public. Why, therefore, announce it? Why not say that it is not so? It is not so anyhow.

MACHINES AND SOCIETY

(*Continued from page* 10)

ployed but for shorter hours per day. A few could be absorbed in new industries, and the balance who were old, retired, instead of retiring men in the prime of life as we do now with general unemployment.

Just stop and think of the millions who would now be unemployed were it not for such machines as railroads, telephones, typewriters, automobiles, radios and aeroplanes. And speaking of new industries, we have television, stratospheric transportation, star power utilization and still will have only pecked at the possibilities. Emerson prophesied star power long ago when he so poetically said "Hitch your wagon to a star." Many thought that he merely wanted us to have far-reaching purposes but that was not the case noble as it is. Emerson had witnessed the use of a star in starting a world's fair and visualized that in time, such energy might be used for transportation.

It must also be borne in mind that there are industries which have not been mechanized to any degree but have suffered just as much or more. That in itself should indicate that the machine is not basically accountable for unemployment and depression. Technological improvements have been instrumental in saving labor but not at the expense of profit and profit is just another term for money. It will work well with all of us if we will but heed the advice of Bacon when he said "Money is like muck, not good except it be spread."

The development of mechanisms, when not used for warfare, has been a blessing. It has given an opportunity for expression to countless numbers, it has increased our demands which can be met with more machinery but most of all it has raised our standard of living. —*Rudolph C. Lang.*

PROGRESS IN OHIO

(*Continued from page 7*)

18. Morgan-Noble-Washington Society of Professional Engineers.
19. Athens Regional Society of Professional Engineers.
20. Franklin County Society of Professional Engineers.
21. Springfield Society of Professional Engineers.
22. Troy Society of Professional Engineers.
23. Dayton Society of Professional Engineers.
24. Tri-County Society of Professional Engineers.
25. Hamilton County Society of Professional Engineers.
26. Southern Ohio Society of Professional Engineers.
27. Portsmouth Society of Professional Engineers.
28. Ironton Society of Professional Engineers.

OHIO SOCIETY OF PROFESSIONAL ENGINEERS

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NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

National Headquarters
National Press Building
WASHINGTON, D. C.

President, D. B. Steinman, New York City; Vice-President, Hugh A. Kelly, Jersey City, N. J.; Vice-President, T. W. Battin, Philadelphia, Pa.; Treasurer and Acting Secretary, Willard S. Conlon, Washington, D. C.

Code of Ethics

Every engineer or surveyor in the State of Ohio seeking registration before the State Board of Registration subscribed to the following Code of Ethics:

I hereby subscribe to and agree to exemplify the following Code of Ethics:

It shall be considered unprofessional and inconsistent with honorable and dignified bearing for any professional engineer or surveyor:

1. To act for his clients in professional matters otherwise than as a faithful agent or trustee, or to accept any remuneration other than his stated charges for services rendered his clients.

2. To attempt to injure falsely or maliciously, directly or indirectly, the professional reputation, prospects, or business of another engineer or surveyor.

3. To attempt to supplant another engineer or surveyor for employment by the use of unethical practices.

5. To review the work of another engineer or surveyor for the same client, except with the knowledge and consent of such engineer or surveyor, or unless the connection of such engineer or surveyor with the work has been terminated.

6. To advertise in self-laudatory language, or any other manner derogatory to the dignity of the Profession.

The above Code of Ethics was a part of the application blank and every applicant was required by the Board to subscribe to it before his application would receive any consideration.

ANNOUNCEMENT
of
Interest to All Ohio Engineers
THE OHIO SOCIETY OF PROFESSIONAL ENGINEERS
Will Be Host to the
Sixteenth Annual Convention
NATIONAL COUNCIL OF STATE BOARD OF ENGINEERING EXAMINERS
and
First Annual Convention
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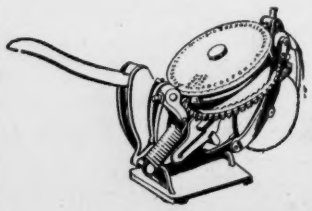

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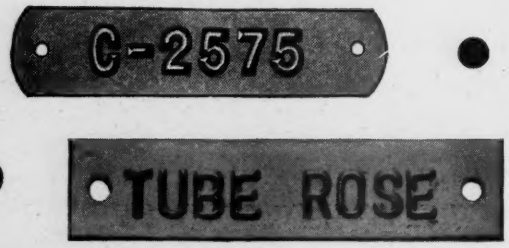
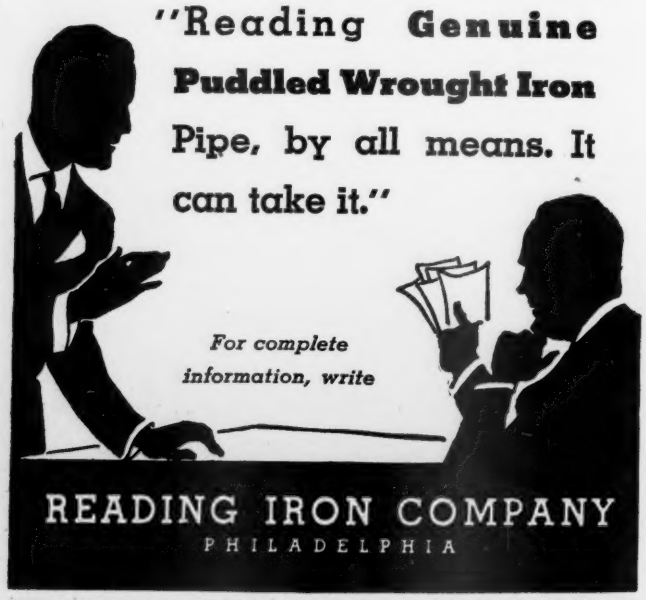


"Corrosion will be bad here, Stanley. What kind of pipe shall we use?"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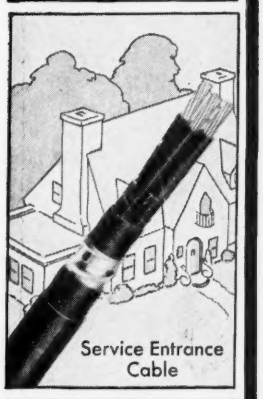
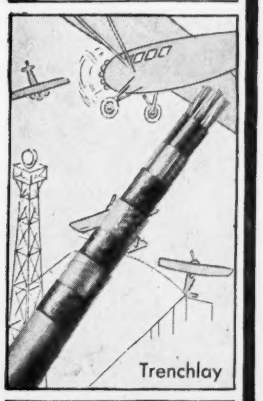

Service Entrance Cable

Safecote Building Wire and Cable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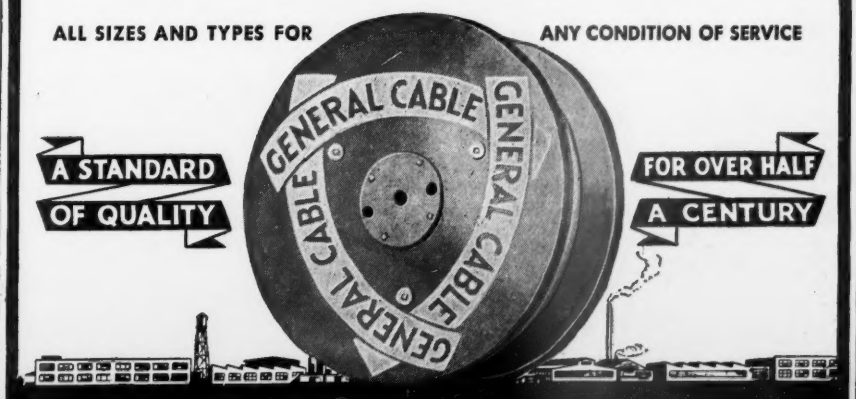

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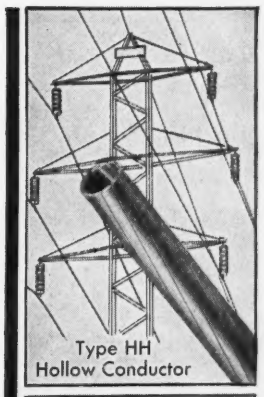
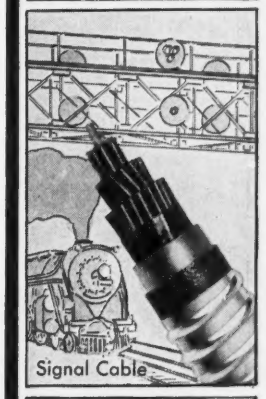
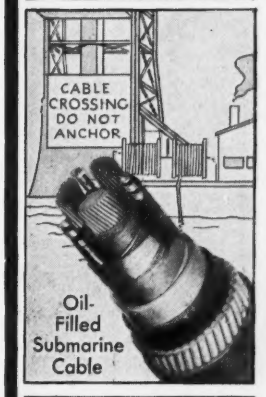

Type HH Hollow Conductor


Signal Cable



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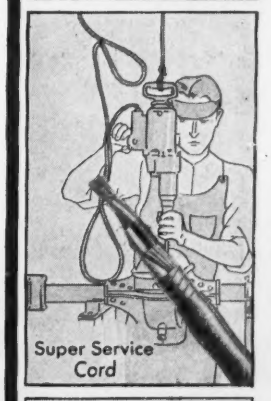
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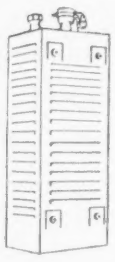

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